Comments and Discussions

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Thank you for giving me a copy of your paper, “Equilibrium Price Dispersion in a Model of Discount Competition.” I find your paper very interesting and your notion of “congestion” very clever and intriguing. However, I do have some comments.

First, I am intrigued by the setup that a consumer takes into account the price and availability of the good she is purchasing. It seems to me this could be a rich area of research. But equation (3),

$$V(p_h, p_{l1}, s_1) = V(p_h, p_{l2}, s_2),$$

oversimplifies the consumer's problem, and therefore leaves out a lot of potentially interesting results embedded in there. With this assumption, there is no serious congestion problem in the model. You might have just taken the thunder away from your model.

I understand this assumption is an assumption of convenience so that your game of discounts by firms would be easier to compute. Nevertheless, some justifications are warranted. Along this line, I have some thoughts.

You have a model in which firms play games and consumers stay passive. Is it possible that price dispersion emerges in a model in which consumers play games and firms stay passive? More precisely, equation (3) assumes that consumers are in perfect coordination. Why don't they play games amongst themselves in a noncooperative way? For example, let $p_{l1} = p_{l2}$, $s_1 = 11$, $s_2 = 19$, and $N = 60$. To achieve (3), consumers must get together and assign who goes where so that in the end 22 consumers go to firm 1 and 38 consumers go to firm 2. Although the result is true on average, it is not necessarily the case in any realization. What would this stochastic component contribute to the observation of price dispersion?

Even though equation (3) is true on average, it is true under certain conditions. One of them is the absence of transactions cost. If there is a cost of traveling, however small, then the robustness of your result becomes an issue. But transportation cost is one of the classic examples of price dispersion. Would the inclusion of transportation cost enrich your results?

If my comments make any sense, then a combined model in which consumers and firms play games should make a milestone contribution to the literature.

Second, I am intrigued by the result of the optimal number of firms in Proposition 5.1. The result is a square-root rule as in Baumol-Tobin model of money demand. See, for example, my book pp.246-247. Your number of firms corresponds to the number of trips. In fact, the setting of the model bears close resemblance to theirs. There are at least two things you can do to enrich your results. One is to draw comparison between the two models and to make some intuitive explanation of the result. The other is to exploit the elasticity results, all of which is $1/2$ in absolute values. I think there is something in there, but I am not qualified to assess that.

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